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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,865	01/21/2005	Dolf Henricus Josef Van Casteren	NL 020679	1255

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EXAMINER

ALEMU, EPHREM

ART UNIT PAPER NUMBER

2821

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/521,865

Applicant(s)

VAN CASTEREN, DOLF  
HENRICUS JOSEF

Examiner

Ephrem Alemu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☐ Claim(s) \_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) 4-8 and 13-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,9 and 10 is/are rejected.
- 7) ☒ Claim(s) 11 and 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 January 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

TAN HO  
PRIMARY EXAMINER

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11-21-05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. Figures 1-4B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

2. The disclosure is objected to because of the following informalities:

(1) A heading for each section has not been included. The Office suggests Applicant to insert a heading in each section of the specification; the section headings are as follows:

Background of the Invention

Brief Summary of the Invention

Brief Description of the Drawings

Detailed Description of the Invention

**each of the headings should appear in upper case, without underlining or bold type, as section headings.** See MPEP § 601.

(2) In page 3, line 3, "a first transformer in series with the lamp current" should be replaced with "a first transformer in series with the lamp" or corrected appropriately.

In page 3, lines 3-6; the small transformer is already saturated at small primary currents" contradicts with the statement "only at a relatively small currents, i.e., around zero crossing, the

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transformer is out of saturation”. Either the transformer is saturated or out of saturation at a relatively small currents; not saturated and out of saturated as discussed in page 3, lines 3-6.

Appropriate correction or clarification is required. No new matter should be included.

***Claim Objections***

3. Claims 4-8 and 13-18 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only and/or cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 4-8 and 13-19 have not been further treated on the merits.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re claim 10, a broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by “such as” and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not

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required, or (b) a required feature of the claims. Note also, for example, the decisions of Ex parte Steigewald, 131 USPQ 74 (Bd. App. 1961); Ex parte Hall, 83 USPQ 38 (Bd. App. 1948); and Ex parte Hasche, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 10 recites the broad recitation "200 mA", and the claim also recites "lower" which is the narrower statement of the range/limitation. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c).

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 2, 3, 9 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Shen (US 6,577,078).

Re claims 1, 2 and 3, Shen discloses driver (i.e., electronic ballast) for a gas discharge lamp (318) (Fig. 4), comprising:

two input terminals (i.e., the two end nodes connecting capacitors C10 & C11 to which the output stage 308 is connected) for connection to a source of substantially DC voltage; two output terminals (i.e., the two terminals where discharge lamp 318 is connected) for connection to a gas discharge lamp (i.e., the two terminals where discharge lamp 318 is connected);

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an arrangement of two controllable switches (MOSFETs 310, 312) connected in series between the two input terminals (i.e., the two end nodes connecting capacitors C10 & C11 to which the output stage 308 is connected); an inductor (L3) connected in series with the two output terminals (52a, 52b) (i.e., the two terminals where discharge lamp 318 is connected), this series arrangement being coupled to a node between the two switches (MOSFETs 310, 312);

a control unit (i.e., MOSFET driver circuit 314) having two control outputs coupled to provide control signals (signals 316) to the two controllable switches (MOSFETs 310, 312);

the control unit (i.e., MOSFET driver circuit 314) being designed to generate its control signals (signals 316) at relatively low-frequency commutation intervals and in relatively high frequency operational phases, such that during a first commutation interval a lamp circuit current has substantially only a first direction, while during a second commutation interval the lamp circuit current has substantially only a second direction opposite to the first direction, and such that during a second operational phase the lamp circuit current has a substantially continuously increasing level, while during a second operational phase the lamp circuit current has a substantially continuously decreasing level (Figs. 2, 4; Col. 3, line 9- Col. 4, line 18; Col. 5, line 32- Col. 6, line 4);

wherein the control unit (i.e., MOSFET driver circuit 314) is designed to generate its control signals such that the two switches (MOSFETs 310, 312) are always switched substantially simultaneously in counter-phase (Figs. 2, 4; Col. 3, line 9- Col. 4, line 18; Col. 5, line 32- Col. 6, line 4; wherein the control unit (i.e., MOSFET driver circuit 314) is designed to generate its control signals (signals 316) such that: during the first commutation interval and the first operational phase, a first switch (310) coupled between the node (i.e., the connection point

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between switches 310 & 312) and a positive input terminal (i.e., the top end node connecting capacitor C10) is substantially conductive, while a second switch (312) coupled between the node (i.e., the connection point between switches 310 & 312) and a negative input terminal (i.e., the bottom end node connecting capacitor C11) is substantially non-conductive; during the first commutation interval and the second operational phase, the first switch is substantially non-conductive while the second switch (312) is substantially conductive; during the second commutation interval and the first operational phase the first switch (310) is substantially non-conductive while the second switch (312) is substantially conductive; during the second commutation interval and the second operational phase, the first switch (310) is substantially conductive while the second switch (312) is substantially non-conductive).

Re claim 9, Shen discloses an electronic ballast (Fig. 4) having a detector (i.e., transformer T3 including zero-current detection circuit 322) for sensing a current and for generating an output signal indicative of the current crossing zero, the detector comprising a transformer (T3) having a primary winding (i.e., the transformer T3 winding connected to the lamp 318) for receiving the current to be sensed and further comprising a secondary winding (i.e., the transformer T3 winding connected to the zero-current detection circuit 322) inductively coupled to the primary winding, the transformer (T3) being designed such as to be magnetically saturated already at a very low current saturation level (Col. 5, lines 39-67).

Re claim 10, as best understood, given Shen's detector (i.e., transformer T3 including zero-current detection circuit 322) being small saturable transformer (T3), the current saturation level being in the order of small current level is inherent for sensing the zero crossing of current  $i_{L3}$  (Fig. 4; Col. 5, lines 47-58).

***Allowable Subject Matter***

8. Claims 11 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fail to teach or suggest alone or in combination, the limitations: “a first diode having a first terminal coupled to a first end terminal of the secondary winding; a second diode having a first terminal coupled to a second end terminal of the secondary winding and having its second terminal connected to the second terminal of the first diode; a resistor having one terminal connected to the node between the two diodes and having its other terminal coupled to a central tap of the secondary winding” as claimed in claim 11.

Claim 12 is objected to as being dependent over claim 11.

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Takehara et al. (US 6,069,458); Gradzki et al. (US 5,973,437); and Chandrasekaran (US 5,291,101); also teach similar inventive subject matter.

***Correspondence***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ephrem Alemu whose telephone number is (571) 272-1818. The examiner can normally be reached on M-F Flex hours.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don K Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

EA  
1-17-06

  
TAN HO  
PRIMARY EXAMINER